

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
9 June 2005 (09.06.2005)

PCT

(10) International Publication Number  
**WO 2005/052659 A1**

(51) International Patent Classification<sup>7</sup>: **G02B 6/12**,  
H05K 1/00

(21) International Application Number:  
PCT/FI2004/050175

(22) International Filing Date:  
24 November 2004 (24.11.2004)

(25) Filing Language: Finnish

(26) Publication Language: English

(30) Priority Data:  
20035223 27 November 2003 (27.11.2003) FI

(71) Applicant (for all designated States except US): ASPER-  
ATION OY [FI/FI]; Tekniikantie 14, FI-02151 ESPOO  
(FI).

(72) Inventor; and

(75) Inventor/Applicant (for US only): HIETALA, Joni  
[FI/FI]; Pumpparintie 10, FI-37830 VIIALA (FI).

(74) Agent: TAMPEREEN PATENTTITOIMISTO OY;  
Hermiankatu 12 B, FI-33720 TAMPERE (FI).

(81) Designated States (unless otherwise indicated, for every  
kind of national protection available): AE, AG, AL, AM,  
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,  
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,  
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,  
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,  
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,  
ZW.

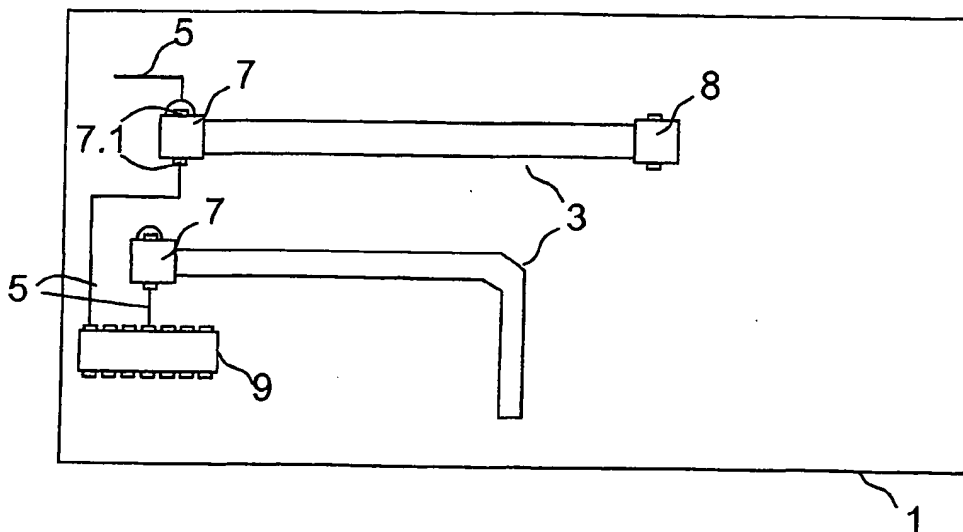
(84) Designated States (unless otherwise indicated, for every  
kind of regional protection available): ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,  
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,  
FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE,  
SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,  
GW, ML, MR, NE, SN, TD, TG).

**Published:**

- with international search report
- before the expiration of the time limit for amending the  
claims and to be republished in the event of receipt of  
amendments

For two-letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.

(54) Title: A CIRCUIT BOARD AND A METHOD FOR ITS MANUFACTURE



(57) Abstract: The present invention relates to a circuit board (1) with at least one substrate layer (2) and at least one optical channel (3). At least one substrate layer (2) of the circuit board (1) is made of plastic. A mould has been used for shaping the substrate layer (2). The substrate layer (2) is provided with the shape substantially corresponding to the shape of the optical channel (3). The optical channel (3) is formed in the shape formed in said substrate layer. The invention also relates to a method for manufacturing a circuit board (1) as well as to a method for manufacturing a circuit board in a continuous process.

WO 2005/052659 A1